Poseidon System Ferrybox
The FB is the latest addition to the Poseidon System. The selected route meets two Poseidon stations/buoys.

SeaWatch buoys
surface parameters

Wavescan buoys
Supporting deep sea monitoring including ecosystem variables
High-Speed Ferry “Olympic Champion” covering the distance every night in 7 hours (speed > 20 knots). The FB is installed in the Bow thruster department 2 meters below the waterline.
HCMR FerryBox System

Ferry Box System I (-4H- JENA engineering GmbH) originally installed on “Kriti II” in the framework of MFSPP and MFSTEP projects. Rebuild and updated at 2012.

- Temperature-Conductivity (Thermo-Salinometer FSI)
- Fluorescence-Turbidity (Scufa II Turner Design)
- Dissolved Oxygen (Aanderaa optode)
- pH (Meinsberg probe)
Surface Salinity Minimum: an indicator of Black Sea Water (BSW) flowing in the Aegean Sea.
Assimilating Ferry Box data into the Aegean Sea model

G. Korres¹, G. Petihakis¹, M. Ntoumas ¹
¹ Institute of Oceanography, Hellenic Centre for Marine research

some preliminary results....
Model: POM (Princeton Ocean Model) - 3D, SIGMA, FREE SURFACE
Domain: Aegean Sea 19.5E->30E & 30.4N->41N
Resolution: 1/30 x 1/30 & 24 sigma layers
OBC: MED MFS 1/16 (SYS2B) DAILY
Lateral Input: Rivers + Dardanelles outflow/inflow (climatology)
Surface Forcing: HCMR NON-HYDROSTATIC ETA 1/20 atmospheric forcing (hourly)
Surface Forcing: Bulk formulae (net shortwave + downward longwave radiation provided by ETA/HCMR atmospheric model).
Freshwater flux boundary condition
Initialization method/fields: ANALYSIS (DATA ASSIMILATION) - ONCE A WEEK
The ocean data assimilation system of the Aegean Sea model

Localized SEEK filter with **partial evolution** of correction basis

**OCEAN SATELLITE DATA**

**OCEAN IN SITU DATA**

**QUALITY CONTROL**

**OCEAN ANALYSIS**
(weekly or daily updates)
ASSIMILATION EXPERIMENTS FOR THE PERIOD AUG 2012 – JAN 2013

<table>
<thead>
<tr>
<th>NAME</th>
<th>PERIOD</th>
<th>ASSIM. DATA</th>
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<tbody>
<tr>
<td>CONTROL</td>
<td>14.08.12 – 31.01.13</td>
<td>SAT SSH &amp; SST, ARGO T/S PROFILES (WEEKLY)</td>
</tr>
<tr>
<td>EXP1</td>
<td>14.08.12 – 31.01.13</td>
<td>SAT SSH &amp; SST, ARGO T/S PROFILES (WEEKLY) + FERRYBOX SST (DAILY)</td>
</tr>
</tbody>
</table>

BOTH ASSIMILATION EXPERIMENTS (CONTROL & EXP1) ARE INITIALIZED FROM THE AEGEAN SEA MODEL OPERATIONAL RUN.

FERRYBOX SST DATA ARE MISSING FOR THE PERIOD 24.10.12 – 05.12.12 (SYSTEM MAINTENANCE)

FERRYBOX SST DATA ARE ASSIMILATED ON A DAILY BASIS
FERRYBOX SST RMS ERROR (CONTROL & EXP1)
EFFECTS OF FERRYBOX SST DATA ASSIMILATION ON SEA SURFACE HEIGHT

FORECAST RMS ERROR

ANALYSIS RMS ERROR

EXP1